# Old Icelandic Consciousness Embedded in the Gunnlaug Saga

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Abstract A scientific approach to Old Icelandic text means considering it as self-referential and self-organising system. This implies that strings of graphemes become patterned through their own internal driving forces. In treating the Gunnlaug Saga with the reversibly synthesizing Agent-action-Objective [AaO] mechanism, emerging space-time patterns allow for setting up phase-dependent transitions for the [A] and [O] components of the mechanism. Thereby, multi-stability is made evident through bi-componential (A-O) disparity in hyperbolic spaces. As a consequence, it is shown that real time imaging and the production of heterochronic structures are contributing effectively to Potential Energy Surfaces (PES) as well as Free Energy Surfaces (FES). Q-measures, associated with the dimensions of Orientation and Intention, are forming the basis for the abstraction and extraction of the roots of Old Icelandic consciousness. In the Gunnlaug Saga, the materialized root of Orientation is connected with [O] and the root of Intention is linked to [A]. By means of the developed naming function, it is made evident that *Virtue* is the perceived quality in the O-root while *Impetus* is the observed outcome of the A-root. Finally, the Appendix contains all information on the computations and the transformations as well as the complete results of the applied naming function.

# Computation

Because the sciences and especially the social sciences have been associated with the notion of number, understanding the fundamentals of measurement and representation of real systems means the assignment of numbers. However, recent account of string-theoretical approaches and functional geometry, rediscovered by the space sciences, is sharply distinguishing number from magnitude (Lloyd, 2001). This has important scientific consequences for the so-called register sciences which have been founded on the strict operation of counting (Ridley, 2003).

#### The Need and Use

From time to time, it has been stated that the testing of significance is in crisis (Bakan, 1966/1971; Heath, 2000). The roots of this crisis have been traced back to K. Pearson, who developed correlation statistics, and to F. Galton, who developed regression as the basic mathematics of heredity (Porter, 2004). Together with R. F. Fisherøs multivariate analysis and the developed stochastic mechanisms, they bear the essential responsibility.

The rules, according to which individuals are expected to change their behavioural states, presuppose that stochastic mechanisms are at work. However, it seems to be an unmanageable task to link algebraic models and stochastic mechanisms with the attempt to picture *text building behaviour* (B. Bierschenk, 1991, 2002). For example, the variability in the process of reading and writing appears to pose intractable problems for the normatively based theories of selection and testing as well as for an evaluation on the basis of *the standard model of the social sciences* (Pinker, 2002). Thus, neither the conclusions drawn from the results of correlation statistics nor the effects, derived from the analysis of variance (Reinecker, 1995), can accommodate the variability in human behaviour (Heath, 2000).

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From an evolutionary point of view, the study of human behaviour requires that movement protocols and equations (Bernstein, 1967) must come into existence. As a minimum, a protocol, based on the [AaO] equation, is an expression of both displacement in unit steps (usually no more than 3 to 5) and firmness in the evolutionary development of its unity. However, within individual components unit-step operations do allow neither a rhythmic nor clock-like rotations. Liberating the movement patterns of the components implies that every single component is following its own autonomous rhythm. This individuality is handled by the established ( ) and ( ) clocks. Their clocking resolutions are observable through the production of open spheres as well as through an analysis of componential a-symmetries.

To catch the fundamental movement equations, derived from the AaO formula, requires that the realisation of strings can be demonstrated also on the ecological (= meso) level. At this level, resonating string relations and strand dependencies constitute the valid underpinnings for the needed geometric calculations. In setting up an efficient computational basis (Hestenes, 1994, p. 65; Duan, Cirac, & Zoller, 2001; Lloyd, 2001), observations on the bi-componential disparity in string movements and an account on their pattern dynamics will be applied.

## Non-linear Dynamics

In studying spinning strings in the context of natural language systems, Table A1 in the Appendix is showing that string-rotation is a valid concept in the observation of evolutionary language dynamics and its thermodynamic limits. The significance of string rotation is founded on the hypothesis that distance is a function of rotational acceleration and that spinors have the capacity to carry rotating string composites of varying complexity. By the description of rotating strings, super strings and super symmetries, fitness values will be produced during the generation of string composites. Finally, it will be made evident that the phase transition of a string from its immaterial to its material state results in a super-fluid solid, which means that flows of kinetic energy are decreasing the symmetry of a string. Since spinors are controlling the flows, breaking the symmetry of a string allows for the establishment of a-symmetries.

It has been shown that it is possible to determine the dimensional asymmetry of Intention and Orientation. As a result of one text building behaviour, this, however, requires a successful manifestation of the validity of the *string-hypothesis*. Greene (1999) presents the premise of string theory as follows:

í a particle is not pointlike, but instead consists of a tiny one-dimensional loop. Like an infinitely thin rubber band, each particle contains a vibrating, oscillating, dancing filament /í / named a string. (p. 14)

The essential property of the string-hypothesis is that it replaces the assumption of a zero-dimensional point, as proposed by classical physics, with the one-dimensional string as proposed by string-physicists. Presumed is the anchoring of flows of strings in the ( ) helix of the [AaO] system (B. Bierschenk, 1993). Subsequently, it has been possible to demonstrate that the solution or õproofö (Mackenzie, 1998) to an evolving language equation can be founded on the postulated rotary motor which can be likened with the one proposed by Hernández, Kay, and Leigh (2004). Even more important in processing sequences of strings is the rhythmic working of the mechanism which obeys two laws: (1) requires the ( ) and the ( ) clock to synchronize in order to keep and conserve the strict dependencies which must hold within and between ( - ) pairs. The other (2) requires the clocks to generate the basis for computing super string symmetries.

Together, the two laws lead to an invariant coordination. Hestenes (1994) is discussing the term õinvariantö where he points out that invariants concern a õcoordinate-freeö realization of geometric properties. By applying Hestenesø space mathematics, Greeneøs account of the string-hypothesis, and Hurtley and Szuromiøs (2004) assumption that strings flow without dissipation, the processing of strings is linked to measures of topologically interesting (Q) qualities. Since the operating production processes require an open sphere, textual flows can be captured in the movement of string patterns through flow-fields. It follows that only certain conditions of self-organisation, namely those, which provide the preconditions for componential displacements, are supporting the differentiation of dynamical - and -states. Studying string patterns in terms of absolute as well as relational coordination allows for a refined measurement and an extended discussion of the equilibration of the resulting language equations.

In summing up, the string hypothesis, which was proposed by Edward Witten among others (Greene, 1999, p. 298), becomes realised at the moment, when a dynamical state is producing physical measurements on which an unfolding process can be founded that works independent of its material (grapheme) compositions (B. Bierschenk, 2000). Thereby, Nature string stitching device for the production of a language space is unfolded into a sequencing space. By resolving this space, evolutionary measures become available for symmetry producing and breaking processes. When these processes have reached a Fließgleichgewicht (Bertalanffy, 1950/1969), all covalent () and () compounds and composites have become dependent on each other. This explains their pair-wise and complementary operation in the formation of overall symmetries.

#### From Outside

Writings had been absent for a long time before Icelandic composers transformed Sagas into literature, consisting of selections of original manuscripts or transcripts. Their Sagas are, according to Ryskamp (1982, p. 6), probably the most important contribution of the Nordic countries to world literature. From the time of settling in Iceland, Sagas have become widely known through story-telling, performed during social gatherings and during long work hours in the winter (Beamish, 1906). They could develop through oral recitation and this development has been made manifest through writings. That some of the Saga properties may have been changed by writers like Snorri Sturluson (117961241), is easily implied by the observers of the Icelandic scene. On the other hand, it has also been noted that these writers (or bards), by their own, did not attempt to contribute with inner feelings (Sveinsson, 1956, p. 9). For example, as reported by Bugge (1909, p. 249), Giraldus Cambresius (which means Gerald of Wales, 1146ó1223), has given the following description to the Icelanders: Gens brevilogua et veridical (People are concise and credible). They think that their heritage represents utmost literary achievements and a very distinctive style of writing. In this sense, Sveinsson (1956) writes:

But it is also evident that there is no attempt to describe the inner feelings: the diverse motives are not analysed, the nuances of emotions are not described nor the stream of consciousness. But a great deal of a personøs mind can be revealed through his actions, his physical appearance or his words, which is exactly the method used in the sagas. Their point of view is dramatic, just as their movements and suspense are often dramatic also. (p. 9)

Therefore, it is not difficult to understand why Icelanders consider their Sagas to be a historical source of very high reliability. Icelanders tend to lean towards the impersonal, and Gunlogsen (1905) is of the opinion that Sagas are written in a realistic and secular prose style. Through the description of common sense and an appreciation of rationality, as well as enactment of serene and unbiased judgement, sensitivity and vivid imagination shaped the spirit of adventure and esteem for individual virtues. A deep interest in the development of identity and quest for freedom appears to be a cornerstone. Nevertheless, a number of Sagas begin with a dream. With its specific prophetic value, it is rooted deeply in Icelandic mythology. The dream to be studied is reproduced in the Appendix. For analysis, references to manuals in six different European languages are provided in connection with the original Icelandic text.

Over and above what has been said thus far, it can be stated that the observer and interpreter of the Icelandic scene conceive the function of the dream in the context of fate. Grounded in and backed up by the outline, given in Turville-Petre (1972, p. 30), it is also notable that heroes are subjected to impersonal and insensitive fate. According to Turville-Petre, none could live a night after the sentence of the *norns*, i.e., fates. He also refers to a maxim in Iceland that can be described with the proverb õekki er mark at draumum" (not mark at dreams) which has been popular in Iceland for many centuries. When these words are uttered, they often serve as the introduction to a story, illustrating the prophetic value of fetches, e.g., in the form of animals and at the time of the Gunnlaug Saga, preferably birds. Here, it may well be justified to ask how far the dream can carry the burden of being historical (real) and how much of the native traditions are reflecting the true impelling forces of the Icelander. At the moment, it is safe to assume that the dreamer is not a liar, but is communicating the implication of his dream.

The selected dream is pointing towards a beautiful girl that appears as a swan, however before her birth. In the dream, beautiful women are attended by swans. But two eagles are also present, which are representing her future lovers. Both are expected to fight to their death. A third bird, a falcon, has the function of rescuing and becoming the girløs husband. Thus, deeply rooted in the dream is the future which is already there, i.e., in the present (Bauschatz, 1985, p. 17) and existing in the subtle and intricate formation of intention (Sveinsson, 1956, p. 9) which are represented by the fetches.

#### From Inside

Up to now, dreams, composed and recited, have been studied and discussed from the semantic point of view. This means the classical outside-look on social, cultural and historical topics. Moreover, this suggests a free-standing study of dreams. In contrast, by overriding the old ideas of studying dreams with a semiotic and/or physiologic perspective, the present approach will begin by looking at the dream from within. This effort is guided by the hypothesis that consciousness becomes embedded into Sagas. By studying a written version, it becomes also possible to envision a thermodynamic description.

With the purpose to treat Old Icelandic text through a study of its angular articulations, an attempt will be made to apply the *Vertex* procedures of Perspective Text Analysis (PTA) (I. Bierschenk & B. Bierschenk, 2011). Thus, in focusing on language as carrier of consciousness (I. Bierschenk, 1989), it can be noted that the AaO axiom stipulates that the Agent must get its description through the Objective. The study, moreover, will show that the Agent becomes *mirrored* in the Objective which implies the *topology-changing transitions*, proposed by Greene (1999, p. 280).

In connection with the presentation of the procedures in the Appendix, mirroring the dimensions of Orientation and Intention is an essential precondition for studying various degrees of symmetry. Crucial for an understanding of the dynamics in the variable configurations are of course the transitions which are contributing to a manifestation of the changing complexities in Figure 1.

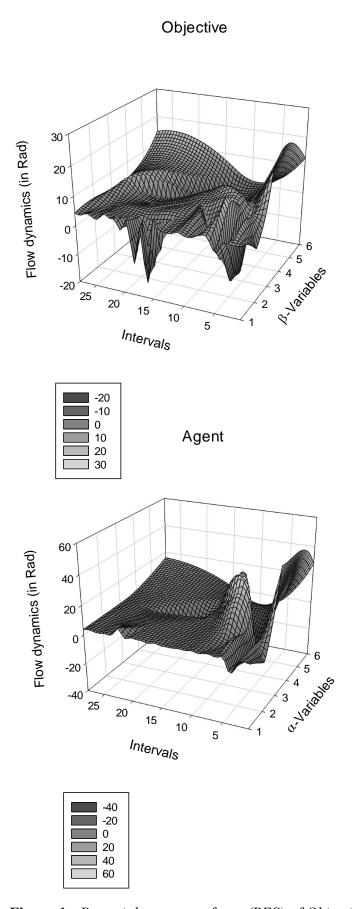


Figure 1 Potential energy surfaces (PES) of Objective and Agent

Dimensional PES symmetry would imply perfectly overlapping of the energy surfaces of the components. In general, a completely symmetric surface would mean that a flat, e.g. a uniformly expanding shape would maintain zero curvature. This, however, is an inconceivable situation since the spin structures of the  $(\beta)$  as well as the  $(\alpha)$  variables always are winding and developing helically. Without their windings it would be impossible to get a

realistic and meaningful picture of the underlying helical structure.

A curvature which is extending orthogonally in the XYZ-directions can make evident the extent to which a flow description of the variables can give expression to their curvatures. As an organizing device, the control parameter of the Y-axis plays an important role in connecting the direction of time with the variables on the X-axis. Their kinetic flow dynamics is expressed through the radians at the Z-axis. Speed and acceleration in the energy flow of the Objective as well as specific changes in angular articulation in the Agent are made evident in Table A2 of the Appendix which contains the magnitudes of the flows and reflects the functional relation between radians and intervals.

The bonding (+) and replacement (-) directions, represented by the flow dynamics, is shown in reversed order. In a description of wave formations, dislocating variables implies a transfer over a specific number of steps. Through processing and integrating corresponding magnitudes, this approach is direct. By means of intrinsic curvatures, an internal aspect becomes unfolded through measures of distance. It follows that rhythmic operations are coming into play and are determining the degree of complexity in a particular *involute*.

Rhythmically operating work cycles, the kind of which has become embedded in the Gunnlaug Saga, are driving kinetic energy flows towards the sharpest increase in acceleration. From within the O- and the A-component at a certain edge, textual movements can be noted to transit a particular angle with a magnitude which might or may not be equal to the joining radian. For example, when variables become allied with large radians, they give expression to higher degrees of displacement compared with variables that are associated with smaller radians.

A certain energy investment is needed for patterning the ( ) variables, which must appear at the lower border of the ( ) domain. The borders embrace the spherical property of *intrinsic* and *extrinsic* curvatures (Wisdom, 2003). The larger the distance to be covered the greater is either the degree of shading or fading. Thus the movement equations of PTA/Vertex are determining the energy needed for patterning the variables alongside their domain borders.

## The Objective

In reading the Objective graph in Figure 1 from the right, the subtle interplay between string magnitudes can be detected in the winding strands. Changing strand-related wave transitions are creating contours. In reading out the flow properties, it is possible to constitute the basis for comprehending the uniqueness of a certain variable. When string winding in the Objective is considered from a dynamical point of view, it becomes evident that the space-related movements of strings are supporting more than one local minimum. On the other hand, the way in which a local minimum is connected in space depends on the dynamic behaviour of the strings.

When the trajectory of a wave runs close to the basin, the flow dynamics becomes an explicit function of three minima and the distances are appearing in the rolling of the wave. Their scope is approachable through a further study of the observed intermittent phase transitions. When a barrier appears a kinetic trap forms which is leading to a rising trajectory. In rolling helically at its tip, the shape of the resulting wave is shown to buckle.

As a function of all identified ( ) and ( ) variables as well as their coordinates, the ( ) geometry, accessed through up-hill transition points (maxima) and down-hill appearing minima, has been the starting point for detecting crucial differences in the rolling and surfing wave formations. Compared to the variables of the A-component, the ( ) variables are both more compact and more complicated.

For example, a marked multi-layered involute can be observed in interval four. It is resulting directly from demonstrated intrinsic bends. Appearing in interval four is a steepestdescent path with the magnitude ( $\approx$ -14). Another one is appearing in interval sixteen with the magnitude of (≈-15). A further pregnant involute is appearing in interval eighteen with the magnitude (≈-9). Differences in the rolling wave formations are directly resulting from progressively demonstrated discontinuities in their involutes.

Relative to the basin lines is a ridge appearing in interval three. Since the wave has the magnitude ( $\approx+8$ ) in the third variable, this interval marks rising speed and thus is, in relation to the steepest-decent track, representing a high transition point which can be observed at the right-hand side.

In the intervals five through seven branch points appear which involve the packing of strings. Emerging is a curvature which marks the highest transition point with the magnitude  $(\approx +7)$  and thus, a certain cusp-shaped contour can be observed. Another heavily packed area appears in the intervals twenty-four through twenty-eight. The ridge here is however regularly packed. Obviously, the developing path is descending towards a ridge at a lower level before the basin is formed. Thus, complexity of the flow dynamics has produced a trajectory that will be compared with the shape determining the Agent.

## The Agent

Basins and differently wired energy barriers are governing the dominating drifts which are carrying inclinations whose focus is directed towards the production of pathways, which are representing faster as well as slower running energy flows. However, curvatures, correlating with the reaction coordinates of new transition states, must change from positive to negative. This means that rotation transformations have produced certain degrees of implicitness. Thus, shadowing is validating novel ways of changing the integration of a string of graphemes. The resulting micro structures are forming the trajectory below sea level.

In reading the cooperative variable interaction on the X-Axis of the Agent graph one or two variables in the first three intervals can be inspected. Their developments are arrested at the tip of a cusp wave. This means that the wave is developing more slowly at its borders, compared to its centre. Conversely, if a wave is rolling helically at its tip, the contour of the resulting shape will buckle as shown in interval four. Hence, the characteristic form of this kind of shapes is a buckle. Since the corresponding magnitudes are ascending in negative direction, the wave is forming a deep basin, running from the right to the centre of the graph. The two steepest-decent trajectories, leading downhill, depart from relatively compact parts which constitute two saddled expanses. Thus, two remarkable branch points have occurred which can be compared transitionally.

Due to changes in positive direction, a particular kind of back-packing is forcing the flow of graphemes in the direction of the steep (or height), referring to a centre of exceptional grapheme packing. Hence, the curvatures along the initial reaction coordinate of the righthand side must become positive.

The overall impression, however, is that the flows in the Agent graph are primarily enforcing the packing of strings of graphemes near or slightly above the zero-line. With respect to the flow dynamics, it can be concluded that the trajectory develops mainly on one or two variables in the intervals five through ten. The height in a transition represent speedy flows, which decent towards the basin. The wave is showing darker shadings in interval

thirteen. The variables five and six have produced values which are descending slightly below sea level. The other variables have generated surfacing waves which depend on extensive textual movements. As degrees of phase-dependent displacements materialize, kinetic energy is transformed into flowing string sequences which have to be conceptualised as a successful outcome of the produced measures on distance.

## **Resonance Spaces**

Defining resonance properties requires an averaging over the range for which the established order parameters have significant values (Wales, 2003, pp. 1-2). Through repeated interpolations over the calculated radians, foliation and branching is shown in the Tables A3 and A4 of the Appendix. The mesh, underlying the landscapes of the resonance spaces, shown below in Figure 2 and Figure 3, has been smoothed with the standard transformation function. Thereafter, SigmaPlot (2008) has been used with its inverse distance method. This function is forcing the measures on the Z-Axis to create mountains and valleys which are characterising the evolving landscapes of Orientation and Intention. In the process, proper communication of the established state attractors implies that higher-order relations have to be identified with names. This suggests the application of a technical operation to the fusion of the variables. To rebound the course of an evolving path, it is tied to exactness and precision in the fusion dynamics of Table A3.

As long as the pairs of values both within a binary group and within an interval do not depart beyond the stated criterion  $(0>\omega_e<1)$ , one-variable groups are reflecting locally continuous systems. However, this measure will result in trivially connected binary groups, consisting of a dummy plus a variable. On the other hand, whenever the iteration process implies a transition from the first to a second iteration and the borders of the established intervals are transcended, new pairs of neighbouring values are formed. In overcoming borders, constituted by the fraction marks and periods of Table A1, the folding process is open and is progressing forwards. But the folding becomes closed whenever the process is binding the participating variables or binary groups backwards.

## The Attractor Space of Orientation

For the folding process to become comprehensible, it is worthwhile to follow up the transformative working of the *naming function* (B. Bierschenk, 1993/2013, p. 23). Once the trajectories of the participating micro structures have moved the fusion process in the realm of the highest global state attractor, only those trajectories are beneficial that move the spiralling path forwards and towards its final destination. Concerning the configuration in the Objective, the final singularity on the folding path is shown to be **Virtue**.

Table 1 is illustrating the corresponding transformation and fusion. It is of vital import to make notice of the implicitness of *Fury*, which, because of this fact, is appearing below sea level.

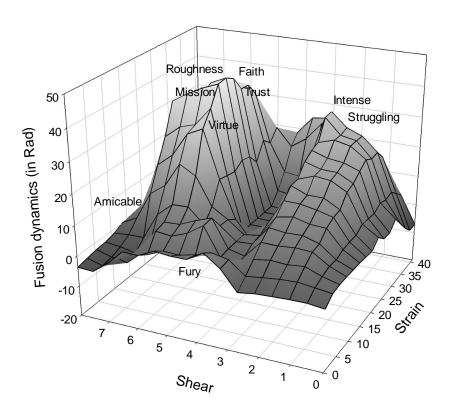
**Table 1** Transformation of  $T_{71}$  through  $T_{78}$  to  $T_{79}$ 

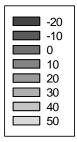
Attractor	q-Value	Transformation
$T_{71}$	225.2545	Roughness
T <sub>78</sub>	-41.668	Fury
T <sub>79</sub>	183.5865	Virtue

Envisioned is a dependency relation in which Fury is influencing Roughness. The transformative effect is resulting in a final integrative move of the naming function. It is an expression of a deeply seated passion of rage which implicates an unleashed anger on offending competitors. As a result, Fury makes something to Roughness which turns out as **Virtue.** It is also the root of the configuration in the Orientation space.

This notation will be used in the discussion of the dependency relation which is characterizing neighbouring termini. The integrative effect of the transformation path is marked at the location of the named singularity. For example, when a regional part in the landscape of Figure 2 becomes specified by a terminus, it gets its significance through the termini, participating in the transformation.

## Orientation





Resonance in the Orientation space

Due to the effect of *Fury* the trajectory is driving towards the steepest-decent which has been shown above to reflect a very high degree of implicitness or depth. The Icelander learned from Hávamál: to survive means to be furious in breaching one's promise, blood vengeance and acts of nobility. This part of the trajectory is producing the means for forming and transforming the effect of being full of *Fury* and falling into a situation which has strange consequences.

By concentrating on the implicitness of the information stored in the path, the developing transformations are progressing below sea level. In relation to the transformed and conserved information, the involved attractors are supporting the apprehension of forced destructive actions. As an expression of quality and a precious and irreplaceable property, *Virtue* should not be scattered (Hallberg, 1964 a, p. 90). Though, nobility as well as integrity seems to be of particular concern, giving offence to kindliness means to be injurious to reputation. With the orientation in the Hávamál saying: *Doom over dead man*, it can be stated that the substantiality in *Faith* requires one to uphold his manliness, i.e., *Virtue*.

As shown in Table 2, the outcome of the effect of *Amicable* on *Trust*, brings to the fore the herculean property of *Faith*.

**Table 2** Transformation of  $T_{61}$  through  $T_{62}$  to  $T_{63}$ 

Attractor	q-Value	Transformation
$T_{61}$	205.3983	Trust
$T_{62}$	8.0883	Amicable
T <sub>63</sub>	213.4860	Faith

Thus, a need for :amicableø behaviour or securing oneøs comfort appears at the left-hand side and near the sea level, however with a lower fusion value. Furthermore, *Trust*, turned through *Amicable* into *Faith*, is a very pronounced quality and an extremely important property. It would have fatal consequences for an Old Icelander if he would compromise *Faith* which implies being the master of oneøs life and death.

With the purpose to deepen the transformative effect of *Fury*, the resulting process is illustrated in Table 3.

**Table 3** *Transformation of T\_{39} through T\_{40} to T\_{41}* 

Attractor	q-Value	Transformation
$T_{39}$	139.5946	Struggling
$T_{40}$	4.4902	Ending
T <sub>41</sub>	144.0848	Intense

To be extremely angry and enraged means that hostility becomes transformed by a dependency relation that is bound to *Intense* in *Struggling*. This circumstance is shown at the right-hand side of Figure 2. Nobody could escape determinate conditions of life. The region in the landscape, which is marked by *Intense*, is resulting from the transformative effect of *Ending*' the state of *Struggling*.

The dependency relation to the unavoidable may imply the feeling of discomfort and the involvement of misfortune, which also may provide physical distress. The transformative effect is the result of a õgameö that is very bloody. Because of a cocky attitude a physical trauma is arising and inflicting the combatants. However, not all *Struggling* is to the death.

Struggling may be seen as an attempt to mobilize impelling forces in order to escape onegs public disappearance. However, being unable to harness natural order, cause and effect was not easily understood by the involved protagonists. Ending a struggle meant that an 'Intense' state, arising from a fatalistic disposition, came to an end. Inevitably, accepting fate also meant the absence of individual responsibility for one own actions. As shown in Table 4, resulting is Roughness, which means a certain conduct towards social and cultural norms and a change of *Mission* by *Defeat*.

Table 4 Transformation of  $T_{65}$  through  $T_{70}$  to  $T_{71}$ 

Attractor	q-Value	Transformation
$T_{65}$	221.1796	Mission
$T_{70}$	4.0749	Defeat
T <sub>71</sub>	225.2545	Roughness

Being strenuously active or resolute in a fierce attempt to change direction, one duty of blood vengeance and securing personal immortality is at stake. However, since no one could live with the disgrace of being a looser without being viewed as inferior, it often turned out to trigger more violent acts than vengeances against many other obvious abuses of possessions such as life and property.

On the other hand, if an offer of compensation would have led to a desire to end Struggling, it would mean an avoidance of any tragic outcome. Still, a destiny to be chosen freely would have been against the inevitable fulfilment of fate. On the path to the right, all kinds of injury are near at hand and dreadful outcomes are almost certain. Since it would have brought with it the irreversible burden of lacking good fortune, overcoming a death-trap was no easy matter and relieve through compromising was out of reach at the time of the Gunnlaug dream.

## The Attractor Space of Intention

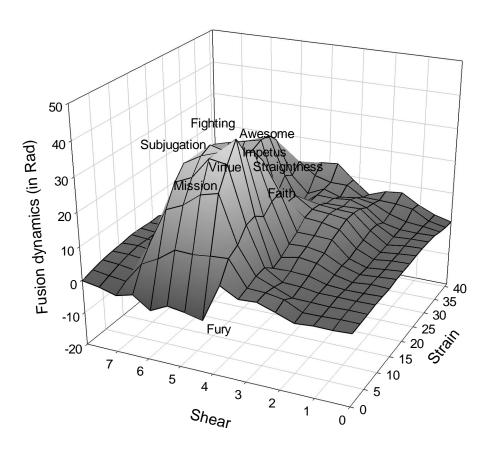
The mechanics for extracting the necessary termini out of the Orientation space is reported in the Tables A4 and A5. A search for novelties in the mountains and valleys of Figure 3 requires a particular way of varying and integrating information invariants in order to fit the shifts in the folding. In general, the result from step-wise recalculations appears in the transformation of its structural relations. A re-working procedure is producing the basis for the observable transition processes and transformational shifts by re-bounding the intentional development. In searching the configuration for uniqueness requires the coupling of differently running trajectories based on the Objective and Agent components respectively.

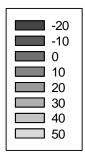
With reference to the supreme import of Virtue (q≈+183) in the O-space of Figure 2, it comes as no surprise that this terminus is with equal substance reappearing and describing the import (q≈+187) in Figure 3. For example, some may distinguish between powerfulness and foolhardiness: a brave person in battle may overcome a justifiable fear for a decent purpose. This is a profound topology-changing property which is characterizing the final or global state of the attractions in the landscape of Intention. Since the extracted termini are used as descriptors, the decisive root of the A-component carries the import of the consequences of manliness. It means, according to the Icelandic code: if the fear is not justifiable or the purpose is not decent, then the bravery is either false, or foolhardy.

Thus, differently convoluted dependency relations, have twisted the componential disparity of intention and orientation into a focused relation that is anchored undeniably in a rough and chilling climate. On the principle of self-organisation and self-reference, it is possible to integrate intention into natural law and to develop a theory of absolute coordination.

Several termini, marking implicitness in the Orientation space of Figure 2, in particular **Impetus** ( $q\approx$ -26), have become explicit in Figure 3. When the transformation process is winding up to the most integrative property, namely **Impetus** ( $q\approx$ +166), energy is re-discovered which some may transform by combatting others, for example, by lacking fear in a situation that normally would generate it.

# Intention





**Figure 3** Resonance in the Intention space

Others, in contrast, may hold that this state of attraction requires one to have fear and then overcome it. There are also more subtle distinctions in the expression of invested energy.

A likewise very substantial descriptor is *Fighting* ( $q \approx +187$ ) and as such a high-ranking one. This property is anchored in defeating one one challengers. To defeat or becoming defeated is rooted in the heroic fatalistic world of Iceland, and judgement of the wounded or dead is entirely within the experienced world. Accordingly, Mission (q≈+155), appears to belong to onegs life which in turn belongs to onegs fellow men and their descendants (Hallberg, 1964b, p. 40).

A third substantial and rebounding transition appears in Subjugation (q≈+172). However, the state of being subjugated is based on self-control. As such, Straightness (q≈+164) belongs to the rules of the bloody game. Here, obtained visual information through keen observation of a Witness ( $q \approx +4$ ) about the power of the rivals makes clear that they are at the edge of life and ÷wounds flame burn in bloody woundsø(Hallberg, 1964 b, p. 111).

Awesome (q≈+168) appears to relate to an irresistible attractiveness of the Icelandic women. Suspicions ( $q \approx +122$ ) have appeared and fostered Stifling ( $q \approx +4$ ). Intentionally, it is forcing the rivals into a passionate Cocky (q≈+3) situation. In remoulding the terminological relation to *Mission*, this terminus is pointing towards its close relationship to *Faith* ( $q \approx +151$ ). It is the only befitting property to offer in an otherwise fatalistic world. This means asserting to the circumstances of being prepared to accept the course of life in the light of fate.

Concerned with the obligations of life, Visible dismay (q≈+100) over the imminent course of events appears as an intentional force. There is a close relationship between the shocking enforcement of Patting ( $q \approx +72$ ) and Intense ( $q \approx +95$ ) in fear when faced with Danger ( $q \approx +61$ ). At the heart lies the close relationship between Serenity ( $q \approx -11$ ) and Fury (q≈-20). Their implicitness is addressing the fact that a woman could influence intense struggling. This property of want and excitement is characterizing a potential for a reactive expression. According to Beamish (1906), a woman by her beauty alone could bring death and destruction upon friend and foes, however unharmed her-self.

### Discussion

In analogy with the spinors approach to binocular disparity in perception by Hestenes (1994), the bi-componential disparity in the working of an AaO unit has been shown to be of fundamental import for discovering the focus in the Icelandic text. Apparently, the applied mirror-strategy has made it possible to study componential disparity in terms of absolute as well as relational coordination between two roots. The O-root, instituted through the final state attractor, carries the terminus: Virtue (Manliness). The complementary A-root is anchored in the final state attractor which has been described with Impetus. Moreover, the Agent-function links Impetus to Virtue and keeps a certain control over experienced selfsensitivity.

The observed uniqueness of the O-root corresponds to a path of greater complexity compared to the root springing from a less complex but more abstract landscape of Intention. It follows that the governing function of the Agent is controlling the descriptive function of the Objective. No matter what the fitness value of a particular variable is, the roots in the perceived dimensions have become realised through absolute coordination. As such, the roots are emphasizing a particular characteristic which is promoting prominence. Since virtue and impetus is conceived of as publicly verifiable qualities, it has to be preserved by public standards, but can also be an easily lost quality.

Final *Note:* It is worthwhile to remember that the Agent-action-Objective axiom stipulates that the *Agent's impetus* must get its description through the *Objective's virtue*, an axiom which finally has been validated empirically.

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#### **Appendix**

The dream runs as follows: Þat dreymði mik, at ek þóttumst heima vera at Borg ok úti fyrir karldurum, ok sá ek upp á húsin ok á mæninum álft eina væna ok fagra, ok þóttumst ek eiga ok þótti mér allgóð. Þá sá ek fljúga ofan frá fjöllunum örn mikinn. Hann fló hingat ok settist hjá álftinni ok klakaði við hana blíðliga, ok hon þótti mér þat vel þekkjast. Þá sá ek, at örninn var svarteygr ok járnklær váru á honum. Vaskligr sýndist mér hann. Því næst sá ek fljúga annan fugl af suðrætt. Sá fló hingat til Borgar ok settist á húsin hjá álftinni ok vildi þýðast hana. Þat var ok örn mikill. Brátt þótti mér sá örninn, er fyrir var, ýfast mjök, er hinn kom til, ok þeir börðust snarpliga ok lengi, ok þat sá ek, at hvárumtveggja blæddi. Ok svá lauk þeira leik, at sinn veg hné hvárr þeira af húsmæninum, ok váru þá báðir dauðir, en álftin sat eftir hnipin mjök ok daprlig. Ok þá sá ek fljúga fugl ór vestri. Þat var valr. Hann settist hjá álftinni ok lét blítt við hana, ok síðan flugu þau í brott bæði samt í sömu ætt, ok þá vaknaða ek. (Old Norse (Old Icelandic), late 1200s)

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- Table A1
   AaO Coding and Computation of Radians
- **Table A2** *Intervals and radians of the alpha and beta variables*
- Table A3
   Transformation of beta variables
- Table A4
   Transformation of the alpha variables
- Table A5
   Extraction of termini from the O-net

Table A1 Angular articulation of strings of graphemes

Code	Ancient Text	Grapheme	Radians	Base	Magnitude	Translation
0						
0,1	*					
30	þat	3	0.4082	3.14	3.5482	that
40	dreymði	6	1.0048			dreamed
50	mik	3	0.4082			me
			1.413	3.14	4.553	
0,1	,	1	0.3768			,
0,1	at	2	0.3768			at
30	ek	2	0.3768			I
			1.1304	3.14	4.2704	
40	þóttumst	8	0.5652			I thought
50	heima	5	0.471			home
			1.0362	3.14	4.1762	
0,1	*					*
30	*			5.5	1.088394	*
40	vera	4	0.5418			be
60	at	2	0.4644			at
60	Borg	4	0.5418			Borg
			1.548	3.87	5.418	
900,1	ok	2	0.1884			and
9030	úti	3	0.2041			there
9030	fyrir	5	0.2355			for
9030	karldurum	9	0.2983			male durum
900,1	,	1	0.1727			,
900,1	ok	2	0.1884			and
			1.2874	1.57	2.8574	
40	sá	2	0.3768			saw
50	ek	2	0.3768			I
50	upp		0.4082			up
	==		1.1618	3.14	4.3018	_
60	á	1	0.4257			at
60	húsin	5	0.5805			houses
			1.0062	3.87	4.8762	
0,1	ok	2	0.4644			and
60	á	1	0.4257			at
60	mæninum	7	0.6579			spinal
60	álft	4	0.5418			swan
60	eina	4	0.5418			only
60	væna	4	0.5418			friendly
60	ok	2	0.4644			and

60	fagra	5	0.5805			fair
			4.2183	3.87	8.0883	
0,1	,	1	0.605	5.5	6.105	,
30	*				-5.61353	*
40	þóttumst	8	0.5652			I thought
50	ek	2	0.3768			I
			0.942	3.14	4.082	
0,1	*					*
30	*				-8.68335	*
40	eiga	4	0.8792	6.28	7.1592	have
50	*				-13.9209	*
0,1	ok					and
30	*				-11.0286	*
40	þótti	5	0.471			thought
50	mér	3	0.4082			me
50	allgóð	6	0.5024			right good
0		1	0.3454			
			1.727	3.14	4.867	
0,1	*					*
30	þá	2	0.3768	3.14	3.5168	then
40	sá	2	0.7536	6.28	7.0336	saw
50	*				0.558315	*
0,1	*					*
30	ek	2	0.3768	3.14	3.5168	I
40	fljúga	6	0.5024			fly
50	ofan	4	0.4396			top
			0.942	3.14	4.082	
60	frá	3	0.5031			from
60	fjöllunum	9	0.7353			mountains
60	örn	3	0.5031			eagle
60	mikinn	6	0.6192			great
0		1	0.4257			
			2.7864	3.87	6.6564	
0,1	*					*
30	Hann	4	0.4396	3.14	3.5796	Не
40	fló	3	0.4082			flea
50	hingat	6	0.5024			hither
			0.9106	3.14	4.0506	
0,1	ok	2	0.66	5.5	6.16	and
30	*				4.267911	*
40	settist	7	0.7096			settled
60	hjá	3	0.5031			with
60	álftinni	8	0.6966			swan
			1.9093	3.87	5.7793	
0,1	ok	2	0.66	5.5	6.16	and

30	*				1.785976	*
40	klakaði	7	0.8007			speaking
70	við	3	0.6123			with
70	hana	4	0.6594			it
70	blíðliga	8	0.8478			friendly
70	ononga	8	2.9202	3.87	6.7902	menary
0,1		1	0.3454	3.67	0.7702	
0,1	, ok	2	0.3768			and
30	hon	3	0.4082			she
30	non	3	1.1304	3.14	4.2704	sile
40	b ś++;	5	0.471	3.14	4.2704	thought
	þótti					thought
50	mér	3	0.4082			me
50	þat	3	0.4082			that
50	vel	3	0.4082			well
			1.6956	3.14	4.8356	
0,1	*					*
30	*			5.5	3.433602	*
40	þekkjast	8	1.1304			distinguished
50	*		0			*
0		1	0.6908		1.821	
0,1	*					*
30	þá	2	0.3768	3.14	3.5168	That
40	sá	2	0.3768			saw
50	ek	2	0.3768			I
			0.7536	3.14	3.8936	
0,1	,	1	0.3454			,
0,1	at	2	0.3768			at
30	örninn	6	0.5024			eagle
			1.2246	3.14	4.3646	
40	var	3	0.4082			was
50	svarteygr	9	0.5966			black-eyed
			1.0048	3.14	4.1448	
0,1	ok	2	0.3768			and
30	járnklær	8	0.5652			iron claws
	-		0.942	3.14	4.082	
40	váru	4	0.5418			were
60	á	1	0.4257			at
60	honum	6	0.6192			him
0		1	0.4257			
			2.0124	3.87	5.8824	
0,1	*		2.012 f	3.07	2.5021	
30	Vaskligr	8	0.5652	3.14	3.7052	Sink glorious
40	sýndist	7	0.5338	٥.1٦	3.1032	it seemed
50	mér	3	0.3338			me
50	hann	4	0.4396			he
30	1141111	1 4	0.4370			116

0		1	0.3454			l .
			1.727	3.14	4.867	
0,1	*					*
30	þvi	3	0.4082			Thereof
30	næst	4	0.4396			next
			0.8478	3.14	3.9878	
40	sá	2	0.3768			saw
50	ek	2	0.3768			Ι
			0.7536	3.14	3.8936	
0,1	*					*
30	*			5.5	3.503002	*
40	fljúga	6	0.5024			fly
50	annan	5	0.471			other
50	fugl	4	0.4396			bird
			1.413	3.14	4.553	
60	af	2	0.4644			of
60	suðrætt	7	0.6579			tropical
0		1	0.4257			
			1.548	3.87	5.418	
0,1	*					*
30	Sá	2	0.3768	3.14	3.5168	Не
40	fló	3	0.4082			flea
50	hingat	6	0.5024			hither
			0.9106	3.14	4.0506	
60	til	3	0.5031			to
60	Borgar	6	0.6192			Borg
			1.1223	3.87	4.9923	
0,1	ok					and
30	*			5.5	3.624633	*
40	settist	7	0.6579			settled
60	á	1	0.4257			at
60	húsin	5	0.5805			houses
			1.6641	3.87	5.5341	
60	hjá	3	0.5031			with
60	álftinni	8	0.6966			swan
			1.1997	3.87	5.0697	
0,1	ok		0.66	5.5	6.16	and
30	*				1.939425	*
40	vildi	5	0.942			would
50	*		6.28		-3.92986	*
0,1	*					*
30	*			5.5	-1.20251	*
40	þýðast	6	0.5024			cuddle
50	hana	4	0.4396			it
0		1	0.3454			
	1	ı				1

			1.2874	3.14	4.4274	
0,1	*					*
30	þat	3	0.4082	3.14	3.5482	That
40	var	3	0.4082			was
50	ok	2	0.3768			and
	örn	3	0.4082			eagle
	mikill	6	0.5024			great
0		1	0.3454			
			2.041	3.14	5.181	
0,1 *						
30	Brátt	5	0.471	3.14	3.611	Soon
40	pótti	5	0.471			found
50	mér	3	0.4082			me
50	sá	2	0.3768			he
50	örninn	6	0.5024			eagle
			1.7584	3.14	4.8984	
0,1	,	1	0.3454			,
30	er	2	0.4082			is
30	fyrir	5	0.471			before
	<u> </u>		1.2246	3.14	4.3646	
40	var	3	0.8164			was
50	*		6.28		-14.9547	*
0,1	,					
30	*			5.5	3.410837	*
40	ýfast	5	0.471			pride
50	mjök	4	0.4396			very
	11.19011		0.9106	3.14	4.0506	, 623
0,1	,		0.3454	0.1.		
30	er		0.3768			is
30	hinn		0.4396			other
			1.1618	3.14	4.3018	
40	kom	3	0.3068	3.11	1.5010	came
60	til	2	0.2832			to
60	*		2.36		-8.86246	*
0,1		1	0.3454		3.00210	
0,1	ok	2	0.3768			and
30	þeir	4	0.4396			they
	т		1.1618	3.14	4.3018	,
40	börðust	7	0.5338	2.11		fought
50	snarpliga	9	0.5966			sharply
	2		1.1304	3.14	4.2704	P1J
0,1	ok	2	0.3454	3.17	1.270-	and
U. I		5	0.471			long
	lengi					1
0,1	lengi	1	0.3454			,

30	þat	3	0.4082			that
			1.9468	3.14	5.0868	
40	sá	2	0.3768			saw
50	ek	2	0.3768			Ι
			0.7536	3.14	3.8936	
0,1	,	1	0.3454			,
0,1	at	2	0.3768			at
30	hvárumtveggj	13	0.7222			either two
	a		1.4444	3.14	4.5844	
40	blæddi	6	1.0048	3.14	4.3044	bled
50	*	0	1.0048			*
0		1	0.6908		1.6956	
0,1	*	1	0.0908		1.0930	*
0,1	ok	1	0.3454			and
30	svá	3	0.4082			so
30	sva	3	0.7536	3.14	3.8936	30
40	lauk	4	0.4396	3.11	3.0730	completed
50	þeira	5	0.471			their
50	leik	4	0.4396			game
	TOTAL	•	1.3502	3.14	4.4902	gume
0,1	,	1	0.4257	0111	,02	,
0,1	at	2	0.4644			at
30	sinn	4	0.5418			its
30	veg	3	0.5031			prevent
30	hné	3	0.5031			knee
30	hvárr	5	0.5805			each looked
30	þeira	5	0.5805			their
60	af	2	0.4644			of
30	húsmæninum	10	0.774			ridge
0,1	,	1	0.4257			,
0,1	ok	2	0.4644			and
			5.7276	3.87	9.5976	
40	váru	4	0.4396			were
50	þá	2	0.3768			then
50	báðir	5	0.471			both
50	dauðir	6	0.5024			dead
			1.7898	3.14	4.9298	
0,1	,	1	0.3454			,
0,1	en	2	0.3768			but
30	álftin	6	0.5024			swan
			1.2246	3.14	4.3646	
40	sat	3	0.4082			sat
50	eftir	5	0.471			after
50	hnipin	6	0.5024			crouching

50	mjök	4	0.4396			very
50	ok	2	0.3768			and
50	daprlig	7	0.5338			depressed
0		1	0.3454			
			3.0772	3.14	6.2172	
0,1	ok	2	0.3768			And
30	þá	2	0.3768			then
	1		0.7536	3.14	3.8936	
40	sá	2	0.3768			saw
50	ek	2	0.3768			I
			0.7536	3.14	3.8936	
0,1	*					*
30	*			5.5	3.526779	*
40	fljúga	6	0.5024			fly
50	fugl	4	0.4396			bird
			0.942	3.14	4.082	
60	ór	2	0.4644			out
60	vestri	6	0.6192			west
0		1	0.4257			
			1.5093	3.87	5.3793	
0,1	*					*
30	þat	3	0.4082	3.14	3.5482	That
40	var	3	0.3768			was
50	valr	4	0.3768			falcon
0		1	0.3454			
			1.099	3.14	4.239	
0,1	*					*
30	Hann	4	0.4396	3.14	3.5796	Не
40	settist	7	0.6579			settled
50	hjá	3	0.5031			with
50	álftinni	8	0.6966			swan
			1.8576	3.14	4.9976	
0,1	ok	2	0.66	5.5	6.16	and
30	*				4.268017	*
40	lét	3	0.4082			had
50	blítt	5	0.471			gentle
			0.8792	3.14	4.0192	=
70	við	3	0.6123			with
70	hana	4	0.6123			it
			2.983	4.71	7.693	
0,1	,	1	0.3454			,
0,1	ok	2	0.3768			and
30	siðan	5	0.471			then
			1.1932	3.14	4.3332	
40	flugu	5	0.471			fly

# 24 Bernhard Bierschenk

50	þau	3	0.4082 0.8792	3.14	4.0192	they
				3.14	4.0192	
60	i	1	0.4257			in
60	brott	5	0.5805			apart
60	bæði	4	0.5418			both
			1.548	3.87	5.418	
0,1	samt	4	0.5418			and
60	í	1	0.4257			in
60	sömu	4	0.5418			same
60	ætt	3	0.5031			family
			2.0124	3.87	5.8824	
0,1	ok	2	0.3768			and
30	þá	2	0.3768			then
			0.7536	3.14	3.8936	
40	vaknaða	7	0.5338			awoke
50	ek	2	0.3768			I
0		1	0.3454			
			1.256	3.14	4.396	

Table A2 Intervals and radians of the alpha and beta variables

Row	Variables	Intervals	Alpha Radians	Beta Radians
1	1	1	3.5482	4.5530
2	1	2	4.2704	4.1762
3	2	2	1.0884	5.4180
4	1	3	2.8574	4.3018
5	2	3	2.8574	4.8762
6	3	3	2.8574	8.0883
7	1	4	-5.6135	4.0820
8	2	4	-8.6834	-13.9209
9	3	4	-11.0286	4.8670
10	1	5	3.5168	0.5583
11	2	5	3.5168	4.0820
12	3	5	3.5168	6.6564
13	1	6	3.5796	4.0506
14	1	7	4.2679	5.7790
15	2	7	1.7860	6.7900
16	1	8	4.2704	4.8356
17	2	8	3.4336	1.8210
18	1	9	3.5168	3.8936
19	1	10	4.3646	4.1448
20	2	10	4.0820	5.8824
21	1	11	3.7052	4.8670
22	1	12	3.9878	3.8936
23	2	12	3.5030	4.5530
24	3	12	3.5030	
25	1	13	3.5168	5.4180 4.0506
26	2	13	3.5168	4.9923
27	3	13	3.6246	5.5341
28	4	13		
29	5	13	3.6246	5.0700
	6	13	1.9394	-3.9299
30			-3.9299	4.4274 5.1810
31	1	14 15	3.5482	
	1		3.6110	4.8980
33	1	16	4.3646	-14.9547
34	1	17	3.4108	4.0506
35	1	18	4.3018 4.3018	-8.8625
36	1	19		4.2704
37	2	19	5.0868	3.8936
38	1	20	4.5844	1.6956
39 40	1	21 22	3.8936 9.5976	4.4902
	1	+		4.9298
41 42	1	23	4.3646	6.2172
	1	24	3.8936	3.8936
43	2	24	3.5268	4.0820
44	3	24	3.5268	5.3793
45	1	25	3.5482	4.2390
46	1	26	3.5796	4.9980
47	2	26	3.5796	4.0190
48	3	26	4.2680	7.6930
49	1	27	4.3332	4.0192
50	2	27	4.3332	5.4180
51	3	27	4.3332	5.8824
52	1	28	3.8936	4.3960

**Table A3** *Beta variable transitions* 

Mesh-X	Mesh-Y	Node	q-Value	Variable Transformation
0	0	0		
0	1	D	0	
1	0	1	4.553	dreamed me
1	1	T1	4.553	Vision
2	0	2	4.1762	thought home
3	0	3	5.418	be at Borg
3	1	T2	9.5942	Recognition
		<i>T1</i>	4.553	Vision
		T2	9.5942	Recognition
3	2	T3	14.1472	Performing
4	0	4	4.3018	saw I up
5	0	5	4.8762	at houses
5	1	T4	9.178	Orientation
		<i>T3</i>	14.1472	Performing
		T4	9.178	Orientation
5	2	T5	23.3252	Charting
6	0	7	4.082	thought I
7	0	9	4.867	thought me right good
7	1	T6	8.949	Serenity
		T5	23.3252	Charting
		T6	8.949	Serenity
7	2	T7	32.2742	Unconfined
8	0	D	0	
9	0	11	4.082	fly top
9	1	Т8	4.082	Hovering
		<i>T7</i>	32.2742	Unconfined
		T8	4.082	Hovering
9	2	Т9	36.3562	Flattering
10	0	D	0	
11	0	13	4.0506	flea hither
11	1	T10	4.0506	Relating
		<i>T</i> 9	36.3562	Flattering
		T10	4.0506	Relating
11	2	T11	40.4068	Enticements
12	0	14	5.779	settled with swan
13	0	15	6.79	speaking with it friendly
13	1	T12	12.569	Dating
		T10	12.569	Dating
	1	T11	40.4068	Enticements

13	2	T13	52.9758	Temptations
14	0	D	0	
15	0	12	6.6564	from mountains eagle great
15	1	T14	6.6564	Foreboding
		T13	52.9758	Temptations
		T14	6.6564	Foreboding
15	2	T15	59.6322	Threatening
16	0	D	0	
17	0	16	4.8356	thought me that well
17	1	T16	4.8356	Delight
		T15	59.6322	Threatening
		T16	4.8356	Delight
17	2	T17	64.4678	Subservient
18	0	19	4.1448	was black-eyed
19	0	20	5.8824	were at him
19	1	T18	10.0272	Impending injury
		T17	64.4678	Subservient
		T18	10.0272	Impending Injury
19	2	T19	74.495	Discouraging
		D	0	
21	0	21	4.867	it seemed me he
21	1	T20	4.867	Estimation
		T19	74.495	Discouraging
		T20	4.867	Estimation
21	2	T21	79.362	Unfavourable
22	0	22	3.8936	saw I
23	0	23	4.553	fly other bird
23	1	T22	8.4466	Altered attention
		T21	79.362	Unfavourable
		T22	8.4466	Altered attention
23	2	T23	87.8086	Penetrating
24	0	D	0	
25	0	24	5.418	of tropical
25	1	T24	5.418	Stifling
		T23	87.8086	Penetrating
		T24	5.418	Stifling
25	2	T25	93.2266	Shocking
26	0	25	4.0506	flea hither
27	0	26	4.9923	to Borg
27	1	T26	9.0429	Approach
		T25	93.2266	Shocking
		T26	9.0429	Approach
27	2	T27	102.2695	Hazard

28	0	27	5.5341	settled at houses
29	0	28	5.07	with swan
29	1	T28	10.6041	Enforcement
		T27	102.2695	Hazard
		T28	10.6041	Enforcement
29	2	T29	112.8736	Annoyances
30	0	D	0	
31	0	30	4.4274	would cuddle it
31	1	T30	4.4274	Comforting
		T29	112.8736	Annoyances
		T30	4.4274	Comforting
31	2	T31	117.301	Patting
32	0	D	0	
33	0	31	5.181	was and eagle great
33	1	T32	5.181	Evaluation
		T31	117.301	Patting
		T32	5.181	Evaluation
33	2	T33	122.482	Suspicions
34	0	D	0	
35	0	32	4.898	found me he eagle
35	1	T34	4.898	Induction
		T33	122.482	Suspicions
		T34	4.898	Induction
35	2	T35	127.38	Antagonistic
36	0	D	0	
37	0	34	4.0506	pride very
37	1	T36	4.0506	Cocky
		T35	127.38	Antagonistic
		T36	4.0506	Cocky
37	2	T37	131.4306	Haughty
38	0	36	4.2704	fought sharply
39	0	37	3.8936	saw I
39	1	T38	8.164	Testimony
		T37	131.4306	Haughty
		T38	8.164	Testimony
39	2	T39	139.5946	Struggling
40	2	D	0	
41	3	39	4.4902	completed their game
40	3	T40	4.4902	Ending
		T39	139.5946	Struggling
		T40	4.4902	Ending
39	3	T41	144.0848	Intense
38	8	D	0	

37	8	18	3.8936	saw I
37	7	T42	3.8936	Witness
		T41	144.0848	Intense
		T42	3.8936	Witness
37	6	T43	147.9784	Visible dismay
36	8	D	0	
35	8	D	0	
34	8	40	4.9298	were the both dead
34	7	T44	4.9298	Departed
		T43	147.9784	Visible dismay
		T44	4.9298	Departed
34	6	T45	152.9082	Loss of life
33	8	D	0	
32	8	41	6.2172	sat after crouching very
32	7	T46	6.2172	and depressed Distress
32		T45	152.9082	Loss of life
		T46	6.2172	Distress
32	6	T47	159.1254	Suffering
31	8	42	3.8936	saw I
30	8	43	4.082	fly bird
30	7	T48	7.9218	Portents
30		T47	159.1254	Suffering
		T48	7.9218	Portents
30	6	T49	167.0472	Bewildering
29	8	D	0	Bewildering
28	8	44	5.3793	out west
28	7	T50	5.3793	Changing Path
	-   '	T49	167.0472	Bewildering
		T50	5.3793	Changing Path
28	6	T51	172.4265	Unforeseen
27	8	D	0	
26	8	45	4.239	was falcon
26	7	T52	4.239	Swiftness
		T51	172.4265	Unforeseen
		T52	4.239	Swiftness
26	6	T53	176.6655	Moving
25	8	46	4.6472	settled with swan
24	8	47	4.8356	had gentle with it
24	7	T54	9.4828	Charming
•	-	T53	176.6655	Moving
		T54	9.4828	Charming
24	6	T55	185.6827	Easing
<i>2</i> ·		133	103.0027	<u> </u>

23	8	49	4.0192	fly they
22	8	50	5.418	in apart both
22	7	T56	9.4372	Departure
		T55	185.6827	Regard
		T56	9.4372	Departure
22	6	T57	195.1199	Honest
21	8	D	0	
20	8	51	5.8824	and in same family
20	7	T58	5.8824	Friendship
		T57	195.1199	Honest
		T58	5.8824	Friendship
20	6	T59	201.0023	Affections
19	8	D	0	
18	8	52	4.396	awoke I
18	7	T60	4.396	Excitement
		T59	201.0023	Affections
		T60	4.396	Excitement
18	6	T61	205.3983	Trust
17	8	D	0	
16	8	6	8.0883	and at spinal swan
16	7	T62	8.0883	only friendly and fair Amicable
10		T61	205.3983	Trust
		T62	8.0883	Amicable
16	6	T63	213.486	Faith
15	8	D	0	
14	8	48	7.693	with it
14	7	T64	7.693	Accompany
		T63	213.486	Faith
		T64	7.693	Accompany
14	6	T65	221.1796	Mission
13	8	D	0	
12	8	10	0.55	saw (I+ fly top of mountains eagle great)
12	7	T66	0.55	Spotting
11	8	D	0	<u>-</u>
10	8	17	1.821	distinguished (then saw I+
	1			at eagle was black-eyed)
10	7	T67	1.821	Awesome
		T66	0.55	Spotting
10		T67	1.821	Awesome
10	6	T68	2.3793	Straightness
9	8	D	0	
8	8	38	1.6956	bled (and so completed their game)
8	7	T69	1.6956	Subjugation

		T68	2.3793	Straightness
		T69	1.6956	Subjugation
8	6	T70	4.0749	Defeat
		T65	221.1796	Mission
		T70	4.0749	Defeat
8	5	T71	225.2545	Roughness
7	8	D	0	
6	8	29	-3.9299	would (he+ cuddle it)
6	7	T72	-3.9299	Comforting
5	8	D	0	
4	8	35	-8.8625	came to (and they+fought sharply+ and that saw I+at either two bled)
4	7	T73	-8.8625	Fighting
		T72	-3.9299	Comforting
		T73	-8.8625	Fighting
4	6	T74	-12.7924	Cockfight
3	8	D	0	
2	8	8	-13.9209	have (and thought me right good+and then saw I+eagle from mountains)
2	7	T75	-13.9209	Vulnerable
		T74	-12.7924	Cockfights
		T75	-13.9209	Vulnerable
2	6	T76	-26.7133	Impetus
2	5	T78	-41.668	Fury
2	4	T79	183.5865	Virtue
1	5	T77	-14.9547	Fierceness
0	6	D	0	
0	5	33	-14.9547	was(pride very+is other+came to+and they+fought sharpl+yí bled

**Table A4** *Alpha variable transitions* 

D	N - 1 -	IVl	D	M - J -	I/l	D	M - J -	V.l	D	N - J -	I/l
Row		q-Value	Row	Noae	q-Value	Row		q-Value	Row		q-Value
1	0	0	52	/// T/2 2	40.0020	104	T36	16.2222	156	T49	116.8767
2	D	0	53	T23	48.8839	105	T37	3.5482	157	T50	4.5844
3	1	3.5482	54	T24	8.4466	106	T38	19.7704	158	T51	121.4611
4	T1	3.5482	55	T25	57.3305	107	T 1	72.0205	160	77.5.1	101 (611
5		0	56	_		108	T31	72.0295	161	T51	121.4611
6	D	0	57	D	0	109	T38	19.7704	162	T52	3.8936
7	2	4.2704	58	21	3.7052	110	T39	91.7999	163	T53	125.3547
8	T2	4.2704	59	T26	3.7052	111			164	_	
9		2.5.10.5	60			112	D	0	165	D	0
10	T1	3.5482	61	T25	57.3305	113	32	3.6110	166	41	4.3646
11	<i>T2</i>	4.2704	62	T26	3.7052	114	T40	3.6110	167	T54	4.3646
12	T3	7.8186	63	T27	61.0357	115			168		
13			64			116	T39	91.7999	169	T53	125.3547
14	D	0	65	22	3.9878	117	T40	3.6110	170	T54	4.3646
15	3	1.08841	66	23	3.5030	118	T41	95.4109	171	T55	129.7183
16	T4	1.08841	67	T28	7.4908	119			172		
17			68			120	D	0	173	42	3.8936
18	4	2.8574	69	T27	61.0357	121	33	4.3646	174	43	3.5268
19	5	2.8574	70	T28	7.4908	122	T42	4.3646	175	T56	7.4204
20	T5	5.7148	71	T29	68.5265	123			176		
21			72			124	T41	95.4109	177	D	0
22	<i>T4</i>	1.08841	73	D	0	125	T42	4.3646	178	44	3.5268
23	<i>T5</i>	5.7148	74	24	3.5030	126	T43	99.7755	179	T57	3.5268
24	T6	6.8032	75	T30	3.5030	127			180		
25			76			128	D	0	181	T56	7.4204
26	<i>T3</i>	7.8186	77	T29	68.5265	129	34	3.4108	182	T57	3.5268
27	<i>T6</i>	6.8032	78	T30	3.5030	130	T44	3.4108	183	T58	10.9472
28	T7	14.6818	79	T31	72.0295	131			184		
29			80			132	T43	99.7755	185	T55	129.7183
30	D	0	81	25	3.5168	133	T44	3.4108	186	T58	10.9472
31	6	2.8574	82	26	3.5168	134	T45	103.1863	187	T59	140.6655
32	Т8	2.8574	83	T32	7.0336	135			188		
33			84			136	D	0	189	D	0
34	<i>T7</i>	14.6818	85	27	3.6246	137	35	4.3018	190	45	3.5482
35	T8	2.8574	86	28	3.6246	138	T46	4.3018	191	T60	3.5482
36	T9	17.4792	87	T33	7.2492	139			192		
37			88			140	T45	103.1863	193	T59	140.6655
38	10	3.5168	89	T32	7.0336	141	T46	4.3018	194	T60	3.5482
39	11	3.5168	90	T33	7.2492	142	T47	107.4881	195	T61	144.2137
40	T10	7.0336	91	T34	14.2828	143			196		
41			92			144	36	4.3018	197	46	3.5796
42	D	0	93	D	0	145	37	5.0868	198	47	3.5796
43	18	3.5168	94	29	1.9394	146	T48	9.3886	199	T62	7.1592
44	T22	3.5168	95	T35	1.9394	147			200		
45	<u> </u>		96			148	T47	107.4881	201	T59	140.6655
46	T21	45.3671	97	T34	14.2828	149	T48	9.3886	202	T60	3.5482
47	T22	3.5168	98	T35	1.9394	150	T49	116.8767	203	T61	144.2137
48	T23	48.8839	99	T36	16.2222	151			204		
49	1		100	120		152	D	0	205	46	3.5796
	19	4.3646	101	D	0	153	38	4.5844	206	47	3.5796
50	20	4.0820	102	31	3.5482	154	T50	4.5844	207	T62	7.1592
51	T24	8.4466	103	T37	3.5482	155	150	1.5011	208	102	1.1372
J 1	1 4 4 7	0.1700	105	131	J.J TU2	133	<u> </u>		200	İ	

Row	Node	q-Value	Row	Node	q-Value
209	T61	144.2137	231	T68	4.3332
210	T62	7.1592	232		
211	T63	151.3729	233	T67	164.3073
212			234	T68	4.3332
213	D	0	236	T69	168.6405
214	48	4.2680	237		
215	T64	4.2680	238	D	0
216			239	52	3.8936
217	T63	151.3729	240	T70	3.8936
218	T64	4.2680	241		
219	T65	155.6409	242	T69	168.6405
220			243	T70	3.8936
221	49	4.3332	244	T71	172.6209
222	50	4.3332	245		
223	T66	8.6664	246	D	0
224			247	37	5.0868
225	T65	155.6409	248	T72	5.0868
226	T66	8.6664	249		
227	T67	164.3073	250	T71	172.6209
228			251	T72	5.0868
229	D	0	252	T73	177.6209
230	51	4.3332			

 Table A5

 Extraction of termini from the beta mesh

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	q-Value       3.5482       -11.0286       -5.6135       -3.9299       -20.572       -9.5434       4.2704       7.8186       166.6465       187.2185       9.5976       1.0884       177.6209       5.0868       5.7148       6.8032       14.6218       172.6209       3.8936       2.8574
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-11.0286 -5.6135 -3.9299 -20.572 -9.5434 4.2704 7.8186 166.6465 187.2185 9.5976 1.0884 177.6209 5.0868 5.7148 6.8032 14.6218 172.6209 3.8936 2.8574
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-5.6135 -3.9299 -20.572 -9.5434 4.2704 7.8186 166.6465 187.2185 9.5976 1.0884 177.6209 5.0868 5.7148 6.8032 14.6218 172.6209 3.8936 2.8574
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-3.9299 -20.572 -9.5434 4.2704 7.8186 166.6465 187.2185 9.5976 1.0884 177.6209 5.0868 5.7148 6.8032 14.6218 172.6209 3.8936 2.8574
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9 3 $T_{A9}$ : $T_8 \rightarrow T_7$ $T_{O9}$ Flattering	17 4700
	17.4792
9 5 $T_{A69}$ : $T_{68} \rightarrow T_{67}$ $T_{O67}$ Awesome	168.6405
9 7 $T_{A68}$ : D $\rightarrow$ 51 $T_{O58}$ Friendship	4.3332
11 1 $T_{A10}$ : $10 \rightarrow 11$ $T_{O8}$ Hovering	7.0336
11 5 $T_{A67}$ : $T_{66} \rightarrow T_{65}$ $T_{O68}$ Straightness	164.3073
11 7 $T_{A66}$ : 49 $\rightarrow$ 50 $T_{O56}$ Departure	8.6664
13 1 $T_{A11}$ : D $\rightarrow$ 12 $T_{O14}$ Foreboding	3.5168
13 2 $T_{A12}$ : $T_{11} \rightarrow T_{10}$ $T_{O10}$ Relating	10.5504
13 3 $T_{A13}$ : $T_{12} \rightarrow T_9$ $T_{O11}$ Enticement	28.0296
13 5 $T_{A65}$ : $T_{64} \rightarrow T_{63}$ $T_{O65}$ Mission	155.6409
13 7 $T_{A64}$ : D $\rightarrow$ 48 $T_{O64}$ Accompany	4.2680
15 1 $T_{A14}$ : D $\rightarrow$ 13 $T_{O10}$ Relating	3.5796
15 3 $T_{A15}$ : $T_{14} \rightarrow T_{13}$ $T_{O15}$ Threatening	31.6092
15 5 $T_{A63}$ : $T_{62}  o T_{61}$ $T_{O63}$ Faith	151.3729
15 7 $T_{A62}$ : $46 \rightarrow 47$ $T_{O54}$ Charming	7.1592
17 1 $T_{A16}$ : D $\rightarrow$ 14 $T_{O12}$ Dating	4.2679
17 3 $T_{A17}$ : $T_{16} \rightarrow T_{15}$ $T_{O17}$ Subservient	35.8771
17 5 $T_{A61}$ : $T_{63}  o T_{60}$ $T_{O61}$ Trust	144.2137
17 $T_{A60}$ : D $\rightarrow$ 45 $T_{O56}$ Departure	3.5482
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1.7860
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	37.6631
19 5 $T_{A59}$ : $T_{58} \rightarrow T_{55}$ $T_{O57}$ Honest	140.6655
19 6 $T_{A58}$ : $T_{57} \rightarrow T_{55}$ $T_{O57}$ Honest	10.9472
19 7 $T_{AS7}$ : D $\rightarrow$ 44 $T_{O50}$ Changing path	3.5268
21 1 $T_{A20}$ : 16 $\rightarrow$ 17 $T_{O67}$ Awesome	7.704
21 3 $T_{A21}$ : $T_{20} \rightarrow T_{19}$ $T_{O21}$ Unfavourable	45.3671
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	7.4204
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	3.5168
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	48.8839

23	6	$T_{A55}: T_{54} \rightarrow T_{53}$	$T_{O55}$	Easing	129.7183
23	7	$T_{A54}: D \rightarrow 41$	T <sub>O46</sub>	Distress	4.3646
25	1	$T_{A24}: 19 \rightarrow 20$	T <sub>O18</sub>	Impending injury	8.4466
25	3	$T_{A25}: T_{24} \to T_{23}$	T <sub>O25</sub>	Shocking	57.3305
25	6	$T_{A53}: T_{59} \to T_{52}$	T <sub>O53</sub>	Moving	125.3547
25	7	$T_{A52}$ : D $\rightarrow$ 39	$T_{O40}$	Ending	3.8936
27	1	$T_{A26}: D \rightarrow 21$	$T_{O20}$	Estimation	3.7052
27	3	$T_{A27}: T_{26} \to T_{25}$	T <sub>O27</sub>	Danger	61.0357
27	6	$T_{A51}: T_{50} \to T_{49}$	T <sub>O51</sub>	Unforeseen	121.4611
27	7	$T_{A50}: D \rightarrow 38$	T <sub>O69</sub>	Subjugation	4.5844
29	1	$T_{A28}: 22 \rightarrow 23$	$T_{O22}$	Altered attention	7.4908
29	3	$T_{A29}: T_{28} \to T_{27}$	$T_{O29}$	Annoyance	68.5265
29	6	$T_{A49}: T_{48} \to T_{47}$	$T_{O49}$	Bewildering	116.8767
29	7	$T_{A48}: 36 \rightarrow 37$	$T_{O38}$	Testimony	9.3886
31	1	$T_{A30}: D \rightarrow 24$	$T_{O24}$	Stifling	3.5030
31	3	$T_{A31}: T_{30} \to T_{29}$	$T_{O31}$	Patting	72.0295
31	6	$T_{A47}: T_{46} \rightarrow T_{45}$	$T_{O47}$	Suffering	107.4881
31	7	$T_{A46}: D \rightarrow 35$	T <sub>O73</sub>	Fighting	4.3018
33	1	$T_{A32}: 25 \rightarrow 26$	$T_{O26}$	Approach	7.0386
33	6	$T_{A45}: T_{44} \to T_{43}$	$T_{O45}$	Loss of life	103.1863
33	7	$T_{A44}: D \rightarrow 34$	$T_{O36}$	Cocky	3.4108
35	1	$T_{A33}: 27 \rightarrow 28$	$T_{O28}$	Enforcement	7.2492
35	2	$T_{A34}: T_{33} \to T_{32}$	$T_{O32}$	Evaluation	14.2828
35	6	$T_{A43}: T_{42} \to T_{41}$	$T_{O43}$	Visible dismay	99.7755
35	7	$T_{A42}$ : D $\rightarrow$ 33	T <sub>O77</sub>	Fierceness	4.3646
37	1	$T_{A35}$ : D $\rightarrow$ 29	T <sub>O72</sub>	Comforting	1.9394
37	2	$T_{A36}: T_{35} \to T_{34}$	T <sub>O34</sub>	Induction	16.2222
38	5	$T_{A41}: T_{40} \to T_{39}$	$T_{O41}$	Intense	95.4109
39	1	$T_{A37}$ : D $\rightarrow$ 31	$T_{O32}$	Evaluation	3.5482
39	2	$T_{A38}: T_{37} \to T_{36}$	$T_{O36}$	Cocky	19.7999
39	3	$T_{A39}: T_{38} \to T_{31}$	$T_{O39}$	Struggling	91.7999
39	4	$T_{A40}: D \rightarrow 32$	$T_{O34}$	Induction	3.6110